

Commercial Harbor Craft Proposed Regulation Workshop



Sacramento

April 24, 2007



California Environmental Protection Agency

Air Resources Board

Overview

- ◆ U.S. EPA Proposed New Engine Standards
- ◆ Proposed Regulation
- ◆ Regulation Emission Reductions
- ◆ Regulation Timeline
- ◆ Other Issues

Current U.S. EPA Marine Engine Standards

- ♦ Tier 0 Engines are unregulated (<2004)
 - Majority of the commercial harbor craft engines
- ♦ U.S. EPA has established Tiered Standards
 - Tier I (2004)
 - Tier II (2004-2007)
 - Vary by engine displacement and model year

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U.S. EPA Proposes More Stringent Emission Standards

- Category 1 and 2 engines
- ♦ Tier III (2009 small engines)
- ♦ Tier III (2012-2014)
 - Category 1* and 2 engines over 800 hp
- ♦ Tier IV (2016-2017)

* Modified Category 1 and 2 break point

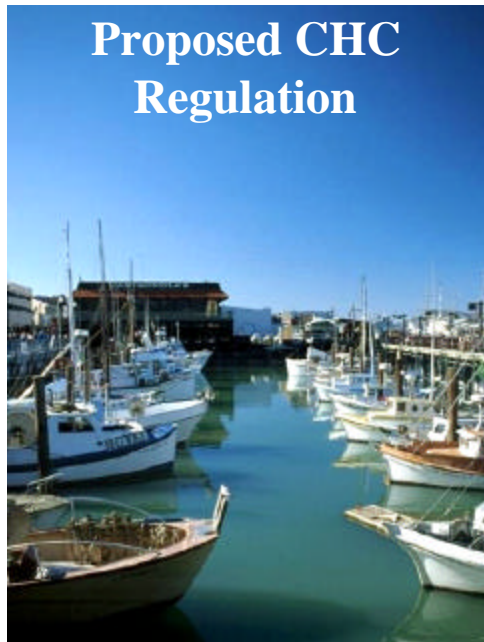
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Average Emission Reductions for Engine Repowers

U.S. EPA Marine Tier	U.S. EPA Marine Tier	NOx Reductions	PM Reductions
Category 1			
Tier 0	Tier I	40 %	25 %
Tier 0	Tier II	60 %	65 %
Tier 0	Tier III	65%	75%
Tier I	Tier II	40 %	60 %
Category 2			
Tier 0	Tier III	69%	78%
Tier 0	Tier IV	91%	94%
Tier 1	Tier IV	82%	92%

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Proposed CHC Regulation



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Summary of Regulation Areas of Responsibility

Vessel Use	Reporting and Record Keeping		"New " Requirements		"In-use" Requirements		
	Hour Meter	Annual Report	New Vessel	New Engine	Purchase of Engine	Purchase Of Vessel	Engine Compliance
Ferry	v	v	v	v	v	v	v
Tug	v	v	v	v	v	v	v
Tow	v	v	v	v	v	v	v
Fishing	v	v	v	v	v	v	
Work	v	v	v	v	v	v	
Crew	v	v	v	v	v	v	
Pilot	v	v	v	v	v	v	
Other	v	v	v	v	v	v	

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Exemptions

- ♦ Ocean-going vessels
- ♦ Recreation vessels
- ♦ Temporary emergency rescue and recovery vessels.
- ♦ Registered historic vessels
- ♦ Military tactical support vessels
- ♦ Vessel engines registered with the Portable Engine Registration Program

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Reporting and Record Keeping Requirements for All Vessels

- ♦ Install non-resettable hour meter
- ♦ Recordkeeping and annual reporting

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Reporting and Recordkeeping Opportunities

- ♦ Recordkeeping and reporting requirements starting 2009
- ♦ Retain opportunity for Carl Moyer and other funds.
 - Reporting and recordkeeping may be required to receive certain funds.
 - Additional PM, NOx, and other emission reductions.

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All New Harbor Craft Vessels (Except Ferries)

- ◆ Require most current EPA engine
 - Sell through provisions
 - Most current engine available when vessel is designed.

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Additional Requirements for All New Ferries

- ◆ Require Tier II or Tier III EPA engine + combined PM and NOx reduction of 85%
- ◆ Or Tier IV engine

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Acquisition of In-Use Vessels and Engines

- ♦ Vessels
 - Sale and purchase of vessels currently being used in CA unrestricted
 - If not currently being used in CA, engines must meet current EPA engine standards
- ♦ Engines acquired for in-use vessels must meet most current EPA engine standards

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Proposed Requirements Specifically For In-Use Ferries, Tugs, and Tow Vessels



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Phased Engine Replacement for In-Use Ferries, Tugs, and Tow

- ◆ Replace Tier 0/I engines with Tier II or cleaner engines
- ◆ Phase in schedule oldest high use engines first

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Statewide Ferries, Tugs, and Tow Proposed Compliance Schedule

< 1975 (>1500 hours)	2009
<1975 (>300 - <1500 hours)	2010
1976-1985 (>1500 hours)	2011
1976-1985 (>300 - <1500 hours)	2012
1986-1995 (>1500 hours)	2013
1986-1995 (>300 - <1500 hours)	2014
1996-2000 (>1500 hours)	2015
1996-2000 (>300 - <1500 hours)	2016
2001-2002 (>300 hours)	2017
2003 (>300 hours)	2018
2004 (>300 hours)	2019
2005 (>300 hours)	2020
2006 (>300 hours)	2021
2007 (>300 hours)	2022

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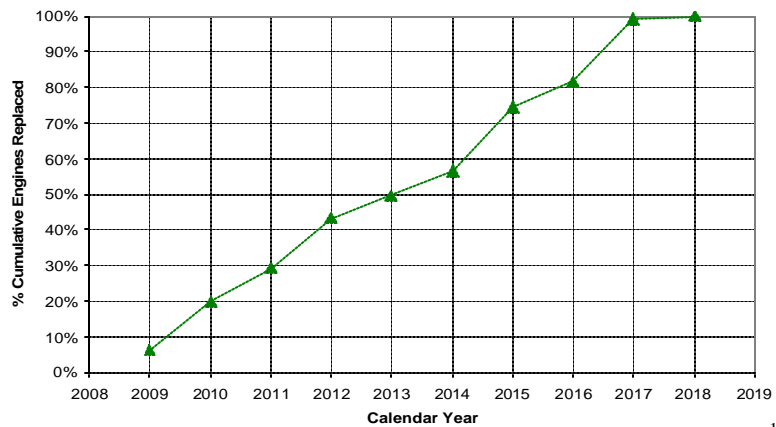
South Coast Ferries, Tugs, and Tow Proposed Compliance Schedule

Pre - 1979	2009
1980 - 1985	2010
1986 - 1990	2011
1991 - 1995	2012
1996 - 2000	2013
2001	2014
2002	2015
2003	2016
2004	2017
2005	2018
2006	2019
2007	2020

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Estimated Schedule for Turnover of Tier 0 & Tier I Ferry, Tug, and Tow Engines

15 Year Replacement



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Ferry, Tug, and Tow Vessel Compliance Options

- ◆ Replace existing engines with most current U.S. EPA Marine engine.
- ◆ Demonstrate existing engine meets most current U.S. EPA Marine engine standard.

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Ferry, Tug, and Tow Vessel Compliance Options

- ◆ Demonstrate pre-2004 engine has been rebuilt to a Tier I standard prior to 2008.
 - Rebuild date can be used as MY for determining compliance date.
- ◆ Install emission control strategy reducing PM or NOx by 25% or greater.
 - Extend compliance 1-5 years.
 - Not an option for MY 2005 and newer.

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Regulatory Extensions with ARB Approval

- ◆ Vessel near retirement
- ◆ Use of a emission control strategy
- ◆ Changes in hours of operation, sales, and change of ownership.
- ◆ No suitable engine replacement.
- ◆ Fleets with multiple vessels complying in same year
- ◆ Equipment delivery or installation delays

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Alternative Compliance Plan

- ◆ Operators may comply using alternative emission control strategies.
- ◆ Must achieve equivalent or greater reductions
- ◆ Applications include a public review process

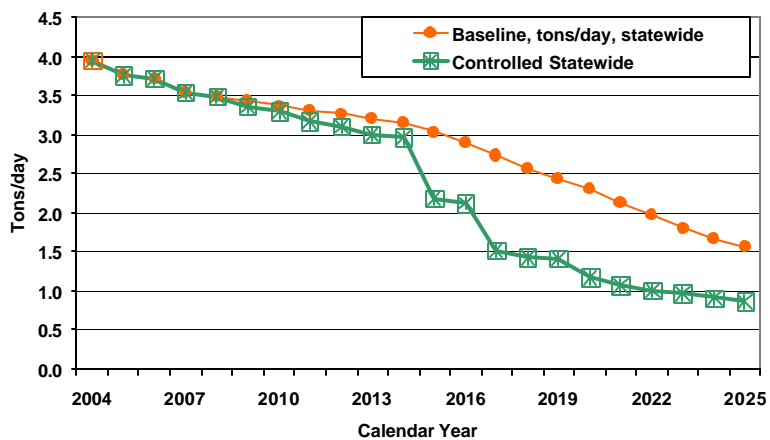
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Estimated Emission Reductions



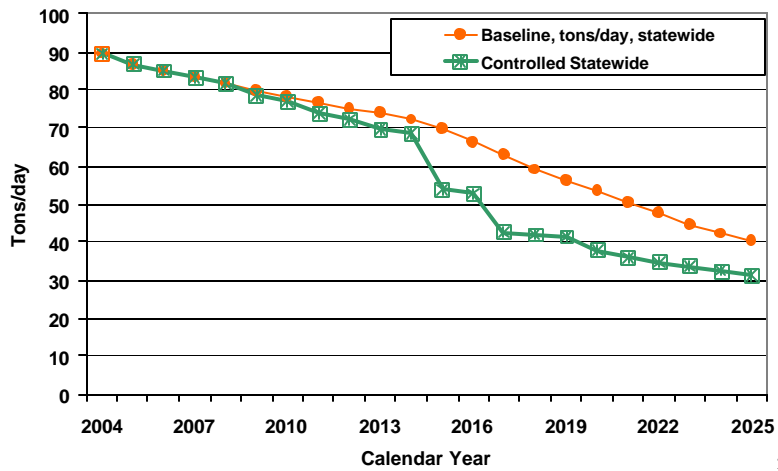
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Estimated Emission PM Reductions



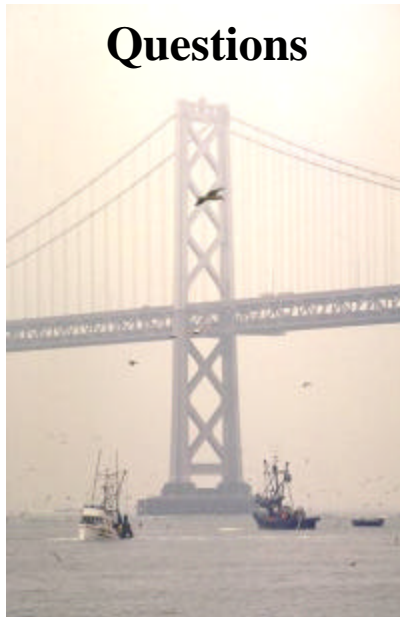
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Estimated Emission NOx Reductions



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Questions



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Next Steps



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Outstanding Issues

- ◆ Vessels visiting CA
- ◆ Compliance timelines
- ◆ Alternatives to meet emission reduction goals
- ◆ Repower facility capacity



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Regulation Timeline

- ♦ July- Next workshop
- ♦ Early August 2007 - Release Initial Statement of Reasons
 - Start 45 day comment period
- ♦ September 2007 - Present to Board for consideration

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Questions



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